

stomachs previously collected, but did not publish, due to delays in the Geological Survey, until 1883, when T. C. Chamberlain's 'Geology of Wisconsin,' Vol. 1, came off the press.

It thus appears that King's work began before that of Dr. Forbes, but was delayed in publication until some years after Dr. Forbes published his first and second researches. While Prof. Aughey had studied ninety different bird species representing 630 stomachs and Dr. Forbes some 40 species representing 460 stomachs (combining figures of all three papers of 1876, 1880 and 1883), Professor King studied 83 species representing over 1800 stomachs, 1600 of these being reported.

The University of Wisconsin has been slow to recognize the great value of Professor King's researches along this line and the noteworthy character of his work. We should take some steps to make generally available the statistical data of the paper as published in the ponderous volumes of the early 80's.

In view of these facts, a partial bibliography of Professor King's writings concerning birds may be recorded here.

- 1883. Economic Relations of our Birds.—Geol. of Wis., Vol. 1, pp. 441–610 (1886). Reproduced in Trans. Wis. Sta. Agric. Soc. for 1886, vol. XXIV, pp. 372–480.
- 1884. The Industrial Relations of Our Birds.—Trans. Wis. Sta. Agric. Soc. for 1882–3, vol. XXI, pp. 261–271.
- 1892. The Migration and Usefulness of Our Birds.—Arbor Day Circular, Wisconsin.
- 1893. The Robin.—Arbor and Bird Day Annual, Wisconsin, pp. 32–4.
- 1896. (Mar. 19) The Ruffed Grouse.—Arbor Day Annual, May 1, 1896, Wisconsin, pp. 23–5.
- 1897. (March 24) The Blue-eyed Yellow Warbler.—Arbor and Bird Day Annual, April 30, 1897, Wisconsin, pp. 8–10.
- 1899. (March 13) The Migration and Usefulness of Our Birds.—Arbor and Bird Day Annual, May 12, 1899, pp. 34–7. (A reprint of 1892 circ., out of print.)
- 1911. (Bird Migration at Hong Kong Island) Farmers of Forty Centuries. p. 62.—Pub. at Madison, Wis., by Mrs. F. H. King.—A. C. BURRILL, *Madison, Wis.*

**Morning-Awakening Notes at Jefferson Highland, N. H.**—Mr. Francis H. Allen in his general note in 'The Auk,' January, 1915, p. 110, again calls in question the genuineness of the early songs which precede the singing of the Robin as morning songs given in response to the break of day, still regarding them as songs of night. Others may share in some measure his incredulity. I desire, therefore, that my records obtained at Jefferson Highland, N. H., should remove this doubt, for they show conclusively season by season that there not only do Song Sparrows and Chipping Sparrows habitually sing several times before the Robin, but that Wood Pewee and Alder Flycatcher are always much earlier singers, and that

White-throated Sparrow, Savannah Sparrow, and Vesper Sparrow so generally sing a few songs before the Robin that it is quite impossible to regard all this earliest singing as other than the singing of the birds in response to the appearance of dawn, suffusing the eastern sky with beautiful soft light and announcing departing night and approaching day. The records indicate that the awakening of the earliest singing birds is gradual, but none the less a genuine awakening, although they give their songs only occasionally in this earliest singing and reserve more demonstrative singing until the light of day has increased. So regular are these earliest songs from the several species of earliest singers that the idea that they are songs of the night is quite untenable. Songs of the night are few, irregular, and adventitious, due to the caprice of the bird, occasionally heard, but not to be regularly looked for and with certainty heard. These earliest songs after the first light of dawn are unfailingly given and can be looked for with certainty of realization.

In the hour preceding visible dawn, which in days of earliest sunrise at Jefferson is 2.30 o'clock or a little before, I have very, very few times heard any expression of song, yet I have often been awake at one o'clock and remained awake listening carefully until I have gone out at two o'clock or a few minutes thereafter. Whereas, as the time of 2.30 approaches, it is usual to hear the first songs from one, two, or three birds which are within range of hearing, and these songs are followed by repetitions from the same birds or from other birds at infrequent intervals for a time, until their awakening is more complete. So it has been my practice to be out shortly after 2 o'clock, when not before; in season for these first responses to the break of day, and experience has shown that the birds' awakening begins with these songs, given when the dawn has already visibly brightened the eastern sky.

The Ovenbird's early flight song, which is heard quite unfailingly at dawn, is its twilight song, equally so in the morning as in the evening and late afternoon. It can be depended upon, at least in the woodlands of Jefferson Highland, and it must be borne in mind that my testimony on the whole subject of the morning awakening is the result of my experience in this mountain hamlet, where there is broad expanse of sky and complete silence reigns, when the day opens, broken only by the birds as they awake and sing.—HORACE W. WRIGHT, *Boston, Mass.*